

VII. *On Cetonia aurata and Protactia Bensoni.*

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[Read 7th April. 1880.]

THE investigation of the claims of many so-called species of insects to be regarded as such on account of slight characteristic distinctions occurring in individuals inhabiting adjacent but distinct localities, possesses a very important bearing on the great question of the origin of species, especially when the objects of the inquiry occur in a free state of nature, undisturbed by the influence of man, and resulting as might perhaps be inferred from modifications of locality, or temperature, or food, or times of appearance. This, it must be admitted, is a very different question from that in which the various modifications in the individuals of a given species have resulted from the action and influence of man, or even by his partial interference. The variations in the various breeds of dogs or of pigeons have doubtless been greatly influenced by human agency, but animals in a wild state of nature must be regarded as having followed a normal state of existence, and if variations have been produced in them, we have a far truer clue to the agency of nature than in the case of domesticated animals and their variations.

The mode in which variation is effected in a given species requires a preliminary inquiry as to the exact differences which exist between any given set of individuals. How and in what manner a variation has taken place is a far more difficult question. In the Transactions of the Entomological Society for 1872, I have endeavoured to trace the variations from the typical state of several species of butterflies, as *Papilio Sarpedon*, *P. Anchises*, &c., whilst in the *Entomologische Zeitschrift* of the Berlin Society, Dr. Kraatz has for several years past been endeavouring to prove that many of the so-called new species of Coleoptera, especially of Carabidæ, are only geographical varieties, or local modifications, or sub-species, or representative species, or by what other name they may be called. In the last part of this work, just published (1879, Hft II.), there

is a paper by the same author, entitled, "*Cetonia aurata* Linné (der Goldkäfer) am Amur in *Euryomia*- und *Glycyphana*-arten verwandelt = *Protaetia Bensoni*, Westw. von Himalaya? ein Beitrag zur Kritischen Deutung der *Cetonia*-formen," pp. 240—252, in which the author endeavours to prove that *Cetonia cupreola*, Kraatz, *Glycyphana viridi-obscura*, Motsch., *Euryomia amouriensis*, Motsch., *Glycyphana pilifera*, Motsch., and probably *Protaetia Bensoni*, Westw., Trans. Ent. Soc., Lond., vol. V. (1849), p. 145, Pl. 16, f. 3, are all merely varieties of *Cetonia aurata*.*

At the meeting of the Belgian Entomological Society on the 3rd January, 1880, the Baron von Harold, alluding to the remarks of Dr. Kraatz, admits their correctness, and adds that *C. Carthusia* may be added to the number of varieties, but that *C. pilifera* must be regarded as a distinct species, with which he considers *Pr. Bensoni* to be identical, the latter being more strongly punctured.

I do not feel called upon to support the claim to specific rank of the five first-mentioned supposed species, my object being to exhibit the typical specimen of *Protaetia Bensoni* side by side with an English *Cetonia aurata* in order to prove their specific distinctions.

P. Bensoni will thus be seen to be a much smaller, more slender, and flatter insect, with comparatively more slender limbs; a complete coat of dull green velvet-like pile, with white markings differing from those of the *Cetonia* in the two straight white lines down the pronotum, and especially in the shape of the head, which is much more conical in front than in the *Cetonia*. Taking all these characteristics into consideration, I must be allowed to maintain my conviction that *Protaetia Bensoni* cannot be regarded as a local modification of *Cetonia aurata*. If the specific identity of the two insects be maintained, size, form, sculpture, clothing, markings, and geographical distribution must no longer be regarded as affording specific distinctions.

* I will not here enter into any defence of the different genera of *Cotoniidae* here alluded to. I fear it must be allowed that far too many genera have been established not only in this, but in very many other families of insects.